U. S. DEPARTMENT OF ENERGY WORK BREAKDOWN STRUCTURE DICTIONARY PART II - ELEMENT DEFINITION

PROJECT TITLE/PARTICIPANT Environmental Management/Paducah Remediation Services, LLC (PRS)		2. DATE 06/29/07	3. IDENTIFICATION SITE Paducah Project DOE Portsmouth/Paducah Project Office (PPPO)	
4. WBS ELEMENT CODE			5. WBS ELEMENT TITLE	
04.11.10.06		Outyear So	Outyear Soils Removal Action	
6. INDEX LINE NO.	7. REVISION NO. AND AU		THORIZATION	8. DATE
N/A	Rev. 1			06/29/07
9. APPROVED CHANGES				
N/A				
10. SYSTEM DESIGN DESCRIPTION			11. BUDGET AND REPORT	TING NUMBER
N/A		N/A		

12. ELEMENT TASK DESCRIPTION

THIS IS A PLANNING LEVEL WBS DICTIONARY

WBS STRUCTURE

The scope of this element includes the following subelements:

- WBS 04.11.10.06.01 Soils Removal Action Subproject Management
- WBS 04.11.10.06.02 Removal Notification
- WBS 04.11.10.06.03 EE/CA
- WBS 04.11.10.06.04 Action Memorandum
- WBS 04.11.10.06.05 Removal Action Work Plan
- WBS 04.11.10.06.06 Removal Action
- WBS 04.11.10.06.07 Removal Action Completion Report

INTRODUCTION

The Soils Operable Unit (SOU) consists of 79 solid waste management units (SWMUs), any soil or rubble piles found as a result of the site wide radiological survey outside the plant, as well as sitewide polychlorinated biphenyl (PCB) and radiologically contaminated outdoor areas.

Under this WBS (SOU Removal Action), only those areas of the SOU that require an action are addressed. Historical characterization data suggests that most of the 79 SWMUs do not represent a sufficient risk to justify an action. It is suspected that some of the ground surfaces below the outside U. S. Department of Energy (DOE) Material Storage Areas (DMSAs) and existing scrap metal stockpiles (scrap metal) may pose some risks. These areas will be characterized after the scrap metal and DMSAs are removed. Areas that warrant an action will be addressed through removal action documentation. These areas will be characterized prior to removal. Removal will consist of excavation and disposal of contaminated soils.

LOGIC RELATIONSHIPS

Interfaces:

Internal to Contractor

- All contractor project managers and staff
- All subcontractors

External to Contractor

- DOE Portsmouth/Paducah Project Office and support contractors
- DOE Headquarters or other DOE sites (if applicable)

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- U.S. Environmental Protection Agency (EPA)
- Commonwealth of Kentucky (KY)
- Site tenants including United States Enrichment Corporation (USEC); Uranium Disposition Services, LLC; and Swift & Staley Team (SST)
- USEC services in the area of property, information technology, radios, etc.
- SST, particularly in the areas of property management, information technology, and security.
- Nevada Test Site (NTS): Profiling and disposition of newly generated and classified and fissile low-level waste (LLW), if required or applicable.
- Energy Solutions: Profiling, treatment, and disposition of mixed and LLW, if required or applicable.
- Toxic Substances Control Act (TSCA) Incinerator, if required or applicable.
- Commercial treatment, storage, or disposal facility: For treatment and disposal of non-radioactive hazardous waste, if required or applicable.
- Stakeholders
- Citizens Advisory Board and supporting contractor Edward Holmes, Inc. (EHI).
- DOE Integrated Safety Management System (ISMS) Verification Team
- Other nonregulatory key interfaces

Time Sequencing with Other Work:

- Removal of the scrap metal and DMSAs must be completed prior to field activities associated with this subproject.
- Final cover over two areas excavated in conjunction with subproject will be applied under the Burial Grounds Operable Unit (BGOU) Removal Action subproject, specifically the areas of SWMU 6 and SWMU 7.
- The Long Term Surveillance and Maintenance (S&M) subproject will cover any five-year review requirements associated with the removal performed under this subproject.

SCOPE DESCRIPTION

WBS 04.11.10.06.01 Soils Removal Action Subproject Management

Provide overall management activities associated with this subproject. Activities performed under this subelement include the following:

- Perform technical, contractual, and project functions necessary to effectively manage and report scope, schedule, and budget.
- Manage and transmit required documents to the Administrative Record.
- Maintain all activities within the defined safety, environmental, and quality requirements.
- Perform technical and personnel management functions.
- Maintain technically qualified and properly trained personnel.
- Develop, evaluate, and report project performance metrics.
- Interface with DOE, KY, EPA, other prime contractors, and stakeholders, as needed.

The method(s) used for determining earned value for this WBS element is Level of Effort.

WBS 04.11.10.06.02 Removal Notification

• Complete D0, D1, and D2 Removal Notification

The method(s) used for determining earned value for this WBS element is Percent Completion.

WBS 04.11.10.06.03 EE/CA

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Complete D0, D1, and D2 Engineering Evaluation/Cost Analysis (EE/CA)

The method(s) used for determining earned value for this WBS element is Percent Completion.

WBS 04.11.10.06.04 Action Memorandum

• Complete D0, D1 and D2 Action Memorandum

The method(s) used for determining earned value for this WBS element is Percent Completion.

WBS 04.11.10.06.05 Removal Action Work Plan

Complete D0, D1 and D2 Removal Action Work Plan (RAWP)

The method(s) used for determining earned value for this WBS element is Percent Completion.

WBS 04.11.10.06.06 Removal Action

- Develop a sampling and analysis plan.
- Sitewide radiological (RAD) walkover survey.
- Conduct soil sampling to a maximum depth of 10 feet below ground surface using hand tools and/or a small truck mounted rig.
- Analyze samples for PCBs and radiological parameters.
- Load analytical results into the Oak Ridge Environmental Information System (OREIS) data system for use.
- Develop report that compares analytical results against no further action (NFA) levels.
- Coordinate activities associated with the public comment period.
- Populate the Administrative Record.
- Develop and issue Requests for Proposal for hotspot removals.
- Evaluate proposals and select subcontractor(s) to perform soil removals.
- Remove approximate 17,185 yd³ of soil. 80% will be disposed of on-site and 20% will be disposed of off-site.
- Perform a MARSSIM-based screening level confirmation sampling in the excavations.
- Backfill excavations with clean soil and compact.
- Characterize waste, develop waste acceptance documentation, transport, and dispose of waste at disposal sites.
- Remove up to 1,000 cubic yards of soil/rubble as a result of sitewide radiological walkover. 90% will be disposed of on-site and 10% will be disposed of off-site.

The method(s) used for determining earned value for this WBS element is Percent Completion.

Before beginning fieldwork, the project team must have an internal field review (IFR). For this IFR, the project team will put together a work package. This work package includes the following:

- Work instructions includes hold points
- Training matrix and evidence of training
- UCD/USQD
- Lessons Learned
- Work authorization and work release from facility managers
- Procedures
- AHA
- Excavation/Penetration Permits
- RWP

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- Team Meeting documentation
- Project Organizational Chart

In addition to the above, a Sampling Analysis Plan (SAP), Quality Assurance Plan (QAP), Waste Management Plan (WMP), and Health and Safety Plan (H&S) may be needed for any non-CERCLA actions.

For CERCLA actions, the appropriate FFA/CERCLA documentation will be required which will include SAP, QAP, WMP, H&S Plan, and other documents, as applicable to the action. These documents may require regulatory approval.

The work package and other documentation are developed by personnel that charge to this project and also by personnel that charge to project support service center (i.e., QAP and RWP).

WBS 04.11.10.06.07 Removal Action Completion Report

• Complete D0, D1, and D2 Removal Action Completion Report

The method(s) used for determining earned value for this WBS element is Percent Completion.

DELIVERABLES

WBS 04.11.10.06.01 Soils Removal Action Subproject Management

Element Milestones:

None

Element Deliverables:

- Paducah Contractor Quality Assurance Project Plan
- Paducah Contractor environment, safety, and health (ES&H) Plan
- Provide input to the following reports and submittals (if applicable):
 - o Monthly Project Performance Report
 - Risk Management Plan Updates
 - Site Management Plan (SMP)
 - o Semiannual Critical Analysis Report
 - o Presentations
 - FFA briefings
 - Labor Standards Determinations
 - o Gold Chart Performance Metrics
 - Annual updates to Site Treatment Plan
 - Annual Compliance Agreement Report
 - o Annual ISMS Update
 - o Annual Work Smart Standards Update
 - o Financial Reporting, Management Analysis Reporting System
 - o Annual Statement of Costs Incurred and Claimed
 - o FFA Semiannual Progress Report
 - o Remedial Action/Regulatory Commitment Tracking Report
 - o Other reports/documents, as necessary

WBS 04.11.10.06.02 Removal Notification

Element Milestones:

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Approval of Removal Notification

Element Deliverables:

Removal Notification draft and final versions

WBS 04.11.10.06.03 EE/CA

Element Milestones:

Approval of EE/CA

Element Deliverables:

• EE/CA D0, D1, and D2 versions

WBS 04.11.10.06.04 Action Memorandum

Element Milestones:

• Approval of Action Memorandum

Element Deliverables:

• Action Memorandum D0, D1, and D2 versions

WBS 04.11.10.06.05 Removal Action Work Plan

Element Milestones:

· Approval of RAWP

Element Deliverables:

• Removal Action Work Plan D0, D1, and D2 versions

WBS 04.11.10.06.06 Removal Action

Element Milestones:

· Soils Removal Action start fieldwork

Element Deliverables:

Complete waste disposal

WBS 04.11.10.06.07 Removal Action Completion Report

Element Milestones:

• Approval of Removal Action Completion Report

Element Deliverables:

• Removal Action Completion Report D0, D1, and D2 versions

REQUIREMENTS

- Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA)/National Contingency Plan (NCP)
- KY Hazardous Waste Permit (KY8-890-008-982)
- FFA for the PGDP
- SMP for the PGDP (annual revisions)
- Applicable state and federal laws and regulations (applicable or relevant and appropriate requirements)

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- Contractor ISMS
- UEO-1066, as updated, Lease Agreement between DOE and USEC, Revision 4, dated October 30, 2001
- Enclosure to GDP 95-0018, as updated, USEC and DOE Resolution of Shared Site Issues, Revision 1, dated March 30, 1998
- Applicable contractor plans, policies, and procedures.
- Waste acceptance criteria for all applicable treatment and disposal facilities that were in effect on April 24, 2006.
- Applicable DOE Orders
- Applicable Federal Acquisition Regulations

It is the core value of the Contractor that the safety and health of every worker, the public at large, and our environment are the most important assets that we are entrusted to protect. To accomplish this, an ISMS, based on DOE's ISMS, has been implemented that incorporates the five core functions and is based on the seven guiding principles. The objective of ISMS is to systematically integrate safety and environmental protection into the planning and execution of all work activities. The term safety encompasses Nuclear Safety, Industrial Safety, Industrial Hygiene, Occupational Health, Health Physics, and environmental issues. ISMS requirements flowdown to Contractor subcontractors. The five core functions are (1) define the scope of work, (2) analyze hazards, (3) develop and implement hazard controls, (4) perform work within controls, and (5) provide feedback and continuous improvement. The seven guiding principles are (1) line management responsibility for safety, (2) clear roles and responsibilities, (3) competence commensurate with responsibility, (4) balanced priorities, (5) identification of safety standards and requirements, (6) hazard control tailored to work being performed, and (7) operations authorization.

Before a subproject begins, several activities must be completed that demonstrate that all involved in the project have completed rigorous health and safety reviews and that all potential hazards of doing the work have been identified. The routine activities in remedial actions are conducted in accordance with standard operating procedures, activity hazard analyses, and Integrated Safety Management plans. Nonroutine work will require a readiness assessment, as necessary, to ensure complete health, safety, and environmental reviews prior to work start. This assessment is conducted by people experienced in similar kinds of work with the right to examine all aspects of a project about to commence and requires that the project team provide documented evidence that any applicable requirements of the job have been met.

SCOPE ASSUMPTIONS

- The vertical soil boundary is considered to be no greater than 10 feet below ground surface. This is the maximum depth of buried utilities at PGDP.
- One field mobilization.
- The walkover survey will be conducted using an automated geographic information system (GIS) recording system, such as USRADS.
- No O&M or O&M Plan will be required.
- The Removal Action will be non-time-critical and be executed per the NCP (40 CFR 300.415).
- Field activities will be consistent with the Removal Action Work Plan.
- Assume PCB soil cleanup level of 25 ppm and RAD soil cleanup to achieve 15 mrem/year in industrial land use areas.
- Assume all soil contamination is in industrial land use areas.
- Contaminants of concern include PCBs and radiological parameters. Additional contaminants will
 not be identified.

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- The primary driver is the CERCLA process outlined in the National Contingency Plan (NCP) (40 *CFR* 300.415)
- Waste that is noncharacteristically hazardous and contains less 30 pCi/g (total U) and contains less than 50 ppm PCBs will be eligible for disposal in the C-746-U Landfill.
- Only waste that fails Toxicity Characteristic Leaching Procedure (TCLP) test will be considered hazardous
- All D2 documents will be approved as submitted.
- Soils immediately adjacent to and beneath facilities will be addressed as part of the decontamination and decommissioning of the PGDP.

COMPLETION CRITERIA

WBS 04.11.10.06.01 Soils Removal Action Subproject Management

 Completion of all technical and reporting requirements for the conduct and reporting of the Remedial Action.

WBS 04.11.10.06.02 Removal Notification

• EPA/KY approval of Removal Notification

WBS 04.11.10.06.03 EE/CA

EPA/KY approval of EE/CA

WBS 04.11.10.06.04 Action Memorandum

EPA/KY approval of Action Memorandum

WBS 04.11.10.06.05 Removal Action Work Plan

• EPA/KY approval of RAWP

WBS 04.11.10.06.06 Removal Action

- · Completion of the Removal Action requirements as defined by the RAWP
- Waste will be disposed of within one year of generation.

WBS 04.11.10.06.07 Removal Action Completion Report

EPA/KY approval of Removal Action Completion Report

RISK MANAGEMENT

See Risk Management Plan for analysis.

Risk was mitigated through the following efforts:

- Continue to perform due diligence in all work activities to reduce the possibility of safety incidents.
- Perform due diligence to ensure that waste is properly packaged and that transportation conveyances are properly loaded.
- Follow waste characterization, packaging, transportation, and disposition procedures and plans.
- Ensure that documents are written professionally and accurately.
- Ensure that fieldwork is carried out safely and in accordance with work instructions.
- DQOs will have qualitative and quantitative statements derived from the DQO Process that clarify

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study objectives, define the appropriate type of data, and specify the tolerable levels of potential decision errors that will be used as the basis for establishing the quality and quantity of data needed to support decisions and process knowledge.

• Subcontractor will follow ALARA principles and approved decontamination procedures.

CERCLA AREAS AND SWMU

SWMU No.	Description
1	C-747-C Oil Land Farm
11	C-400 TCE Leak Site
12	C-747-A UF ₄ Drum Yard
13	C-746-P/Pi Clean Scrap Yard
14	C-746-E/E1 Contaminated Scrap Yard
15	C-746-C/C1 Scrap Yard
16	C-746-D Classified Scrap Yard
19	C-410-B HF Neutralization Lagoon
20	C-410-E Emergency Holding Pond
26	C-400 to C-404 Underground Transfer Line
27	C-722 Acid Neutralization Tank
31	C-720 Compressor Pit Water Storage Tank
32	C-728 Clean Waste Oil Tanks
40	C-403 Neutralization Tank
47	C-400 TCE Storage Tank Area
56	C-540-A PCB Staging Area
57	C-541-A PCB Waste Staging Area
74	C-340 PCB Transformer Spill Site
75	C-633 PCB Spill Site
76	C-632-B Sulfuric Acid Storage Tank
77	C-634-B Sulfuric Acid Storage Tank
78	C-420 PCB Spill Site
79	C-611 PCB Spill Site
80	C-540 PCB Spill Site
81	C-541 PCB Spill Site
92	Fill area for dirt from the C-420 PCB Spill Site
97	C-601 Diesel Spill
99	C-745 Kellogg Building Site
135	C-333 PCB Soil Contamination
137	C-746-A Inactive PCB Area
138	C-100 Southside Berm
153	C-331 PCB Soil Contamination (West)
154	C-331 PCB Soil Contamination (Southeast)
155	C-333 PCB Soil Contamination (West)
156	C-310 PCB Soil Contamination (West Side)
158	Chilled-Water System Leak Site
160	C-745 Cylinder Yard Spoils (PCB Soils)
163	C-304 Bldg./HVAC Piping System (Soil Backfill)
165	C-616-L Pipeline & Vault Soil Contamination

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169	C-410-E HF Vent Surge Protection Tank
170	C-729 Acetylene Bldg. Drain Pits
172	C-726 Sandblasting Facility
176	C-331 RCW Leak Northwest Side
177	C-331 Leak East Side
180	Outdoor Firing Range (WKWMA)
181	Outdoor Firing Range (PGDP)
194	McGraw Construction Facilities (South Side)
195	Curlee Road Contaminated Soil Mounds
196	C-746-A Septic System
200	Soil Contamination South of TSCA Waste Storage
	Facility
204	Dykes Road Historical Staging Area
211	C-720 TCE Spill Site Northwest
212	C-745-A Radiological Contamination Area
213	DMSA OS-02
214	DMSA OS-03
215	DMSA OS-04
216	DMSA OS-05
217	DMSA OS-06
218	DMSA OS-07
219	DMSA OS-08
220	DMSA OS-09
221	DMSA OS-10
222	DMSA OS-11
223	DMSA OS-12
224	DMSA OS-13
225	DMSA OS-14
226	DMSA OS-15
227	DMSA OS-16
228	DMSA OS-17
229	DMSA OS-18
481	C-410-A Hydrogen Cylinder
483	Nitrogen Generating Facilities
488	PCB Contamination Area by the C-410 Trailer Complex
489	Septic Tank, North of C-710
492	Contaminated Soil Area, North of Outfall 10
493	Concrete Rubble Piles Near Outfall 001
517	Rubble and Debris Erosion Control Fill Area
518	Field South of C-746-P1 Clean Scrap Yard
520	Scrap Material West of C-746-A
531	Aluminum Slag Reacting Area
541	Contaminated Soil Area, South of Outfall 011

BASIS OF ESTIMATE

1. Summary of Site ConditionsScrap yards and outside DMSAs will be clear prior to the Removal Action.

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2. Estimating Methods ☐ Parametric ☐ Bottom-Up ☐ 0	Other: <u>Parar</u>	metric & Bottom-Up		
3. Sources of Estimating Labor – Technical review of documents to be prepared determined the mix of labor required for document preparation. Echols & R.S. Means were used to determine craft types to be used for construction-type activities. Project team meetings were utilized to identify staff types to be used for other areas, such as sample collection and analysis, waste characterization and disposal, health and safety monitoring, etc.				
Equipment – Echols & R.S. Means were two printed sources used to determine the types of equipmer needed to conduct the work proposed. Experience from technical staff also provided input as to the type of equipment needed.				
Materials – Same as equipment.				
Other Direct Cost – Same as equipment.				
Transportation – Same as equipment.				
Subcontracts – Experience from technical staff provided requirements for the involvement of subcontracts.				
4. Basis of Estimate (Unescalated Values) See Detail Estimate.				
WASTE VOLUMES				
See attached waste performance metrics, as applicable.				
PROJECT SCHEDULE				
See attached schedule.				
BASELINE BY YEAR				
See attached Baseline by Year Report.				